

WATERS NETWORK SYSTEMS™

OPERATING MANUAL

ProSwitch® Lite



5 and 8 Port Classroom and Workgroup Switches

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TABLE OF CONTENTS

1.0	SPECIFICATIONS	3
2.0	PACKAGE CONTENTS - PROSWITCH® LITE.....	4
2.1	PRODUCT DESCRIPTION.....	4
2.3	LOCATION OF THE PROSWITCH LITE	4
3.0	CONNECTING THE PROSWITCH LITE TO YOUR NETWORK	4
4.0	MOUNTING THE PROSWITCH LITE	5
5.0	POWERING THE PROSWITCH LITE	5
6.0	STATUS OF LEDs	6
7.0	TROUBLESHOOTING.....	6
7.1	BEFORE CALLING FOR ASSISTANCE	6
7.2	RETURN MATERIAL AUTHORIZATION (RMA) PROCEDURE.....	7
7.3	SHIPPING AND PACKAGING INFORMATION	7
8.0	WARRANTY	8

1.0 SPECIFICATIONS

OPERATIONAL CHARACTERISTICS:

MAC Address Table:

2K MAC

Switching Mode:

Store and forward

Performance:

Non-blocking switching architectures

Forwarding Rate:

10Mbps: 14,880 pps

100Mbps: 148,800 pps

Memory Buffer Size:

1MB

Auto-negotiation on TX ports

Broadcast storm filter function

NETWORK STANDARDS:

IEEE 802.3u: 100BASE-TX, 100BASE-FX Fast Ethernet

IEEE 802.3: 10BASE-T Ethernet

IEEE 802.3x Flow Control

EMI/SAFETY COMPLIANCE:

CE & FCC

FCC Class A, UL 1950, CSA C22.2 No. 950, EN60950, CE: EN55022 Class A, EN55024

FIBER PORT CHARACTERISTICS:

Multimode with SC, ST or MTRJ connectors

Speed: 100Base-FX

Wavelength: 1300nm

Maximum distance: 2km

Fiber size: 62.5/125, 50/125

Singlemode with SC connector

Speed: 100Base-FX

Wavelength: 1300nm

Maximum distance: 15/40/75km

Fiber size: 8/125, 9/125

NETWORK CABLE CONNECTORS:

10Base-T: CAT3, 4 or 5; up to 100M (328 feet)

100Base-TX: CAT5 or better; up to 100M (328 feet)

POWER SUPPLY:

Power Input Voltage: 100 to 240V

Power Input Frequency: 50 to 60Hz

.06A External power supply

7.2 watts

OPERATING ENVIRONMENT:

Ambient: 32° to 104°F (0° to 40°C)

Storage: -13° to 158°F (-25° to 70°C)

Ambient relative humidity: 10% to 90% (non-condensing)

MECHANICAL:

Enclosure: Rugged high-strength sheet metal suitable for stand-alone, wall or tabletop mounting

PHYSICAL CHARACTERISTICS:

Dimensions: 6.3 x 3.2 x 1.1 (160 x 81 x 28cm)

Weight: .92LBS (.42kg)

2.0 Package Contents - ProSwitch® Lite

Examine the shipping container for obvious damage prior to installing this product. Notify the carrier of any damage that you believe occurred during shipment. Ensure that the items listed below are included.

The ProSwitch Lite package contains the following:

- 5 or 8 port switch
- AC to DC power

2.1 Product Description

A switch can be used to overcome the hub-to-hub connectivity limitations as well as improve overall network performance. Switches make intelligent decisions about where to send network traffic based on the destination address of the packet. As a result, the switch can significantly reduce unnecessary traffic. The ProSwitch Lite models provide 10/100Base-TX ports with an optional 100Base-FX port in a cost effective pocket size package. The 10/100Base-TX ports auto negotiate speed and half/full duplex modes.

2.3 Location of the ProSwitch Lite

The Lite can be installed quickly and easily. However, for an installation with minimum impact on the existing network, please read the following information carefully. Installing the ProSwitch Lite involves three steps:

1. Choosing a location
2. Supplying power
3. Connecting the switch

Consider the following criteria when selecting a location for the switch:

- Avoid dusty locations
- Avoid electromagnetic noisy areas, such as locations close to power transformers or radio transmitters
- Avoid temperatures below 32° to 104°F (0° to 40°C)
- Allow sufficient space for proper ventilation
- Allow a clear view of the front panel LED indicators
- Allow easy access to the front panel ports and the rear panel switches
- The power outlet should be within six feet (1.8m) of the switch

3.0 Connecting the ProSwitch Lite to Your Network

The ProSwitch Lite has been designed to support all standard Ethernet media types within a single switch unit. The various media types supported along with the corresponding IEEE 802.3 and 802.3u standards and connector types are as follows:

Fiber:

Speed	Media Type	Max. Distance	Connector Type	Port Speed Half/Full Duplex
100Base-FX	Multimode fiber	2km	SC, ST or MTRJ	100/200Mbps
100Base-FX	Singlemode fiber	15, 40 or 75KM	SC	100/200Mbps

Copper:

10Base-T	CAT3, 4 or 5	100m (328ft)	RJ45	10/20Mbps
100Base-TX	CAT5 or 5E	100m (328ft)	RJ45	100/200Mbps

NOTE: Since all switch ports are auto-sensing for both 10 and 100Mbps, it is recommended that high quality CAT5 cables or above (which work for both 10Mbps and 100Mbps) be used whenever possible in order to provide flexibility in a mixed-speed network. Because the switch supports auto MDI/MDI-X detection, normal straight through cables for both workstation connection and hub or switch connection can be used. All ports are auto MDI/MDI-X, so you can use any of the ports to connect a port on another hub or switch with straight through or crossover cables.

4.0 Mounting the ProSwitch Lite

Table-Top or Shelf Mounting

The ProSwitch Lite can be easily mounted on a table-top or any suitable horizontal surface. There are four rubber feet provided for stability so finished surfaces won't be scratched.

5.0 Powering the ProSwitch Lite

The Lite switch is equipped with a universal power adapter that accepts AC input voltages from 100 to 240VAC and 50 to 60 Hz.

To supply power to your switch:

1. Plug the connector of the power cord into the power port on the rear panel of your switch.
2. Plug the power adapter into an AC wall outlet.
3. Verify that the Power LED is lit. If it is not, check the following:
 - The power cord is properly connected to the wall outlet and to the power connection on the switch.
 - The wall outlet is functional.

Note: Network cable segments can be connected or disconnected from the switch while the power is on, without interrupting the operation of the switch.

6.0 Status of LEDs

LED	STATUS	CONDITION
Power	ON - GREEN	Switch is receiving power.
Link / Act	ON - GREEN	Port has established a valid link.
	FLASHING	Data transmission status of connected port
100	ON – GREEN	100Mbps of connected port
	OFF	10Mbps of connected port
FDX/Col	ON – GREEN	Full duplex of connected port
	OFF	Half duplex status of connected port
	FLASHING	Collision status of connected port

7.0 Troubleshooting

All Waters' switching products are designed to provide reliability and consistently high performance in all network environments. The installation of Waters' ProSwitch Lite switch is a straightforward procedure (See Sections 3-5). Should problems develop during installation or operation, this section is intended to help locate, identify and correct these types of problems. Please follow the suggestions listed below prior to contacting your supplier. However, if you are unsure of the procedures described in this section or if the Waters' ProSwitch Lite switch is not performing as expected, do not attempt to repair the unit; instead contact your supplier for assistance or contact Waters Network Systems' Customer Support Center at **800.328.2275** or email carolynl@watersnet.com.

7.1 Before Calling for Assistance

1. If difficulty is encountered when installing or operating the unit, refer back to the Installation Section of the chapter of this manual. Also check to make sure that the various components of the network are inter-operable.
2. Check the cables and connectors to ensure that they have been properly connected and the cables/wires have not been crimped or in some way impaired during installation. (About 90% of network downtime can be attributed to wiring and connector problems.)
3. Make sure that an DC power cord is properly attached to the ProSwitch Lite.
4. Be certain that each AC power cord is plugged into a functioning electrical outlet. Use the PWR LEDs to verify each unit is receiving power.
5. If the problem is isolated to a network device other than the Waters' ProSwitch Lite switch, it is recommended that the problem device be replaced with a known good device. Verify whether or not the problem is corrected. If not, go to next step. If the problem is corrected, the Waters' ProSwitch Lite switch and its associated cables are functioning properly.
6. If the problem continues, contact Waters Network Systems Customer Service at 800.328.2275 or email carolynl@watersnet.com for assistance.

When Calling for Assistance

Please be prepared to provide the following information.

1. A complete description of the problem, including the following points:

- a. The nature and duration of the problem
 - b. Situations when the problem occurs
 - c. The components involved in the problem
 - d. Any particular application that, when used, appears to create the problem
2. An accurate list of Waters Network Systems product model(s) involved. Include the date(s) that you purchased the products from your supplier.
3. It is useful to include other network equipment models and related hardware, including personal computers, workstations, terminals and printers; plus, the various network media types being used.
4. A record of changes that have been made to your network configuration prior to the occurrence of the problem. Any changes to system administration procedures should all be noted in this record.

7.2 Return Material Authorization (RMA) Procedure

All returns for repair must be accompanied by a Return Material Authorization (RMA) number. To obtain an RMA number, call Waters Network Systems Customer Service at 800.328.2275 during business hours of 8:00 am to 5:00 pm (CT) or email carolyn@watersnet.com. When calling, please have the following information readily available:

- Name and phone number of your contact person
- Name of your company/institution
- Your shipping address
- Product name
- Packing List Number (or Sales Order Number)
- Failure symptoms, including a full description of the problem

Waters Network Systems will carefully test and evaluate all returned products, will repair products that are under warranty at no charge, and will return the warranty-repaired units to the sender with shipping charges prepaid (see Warranty Information at the end of this manual for complete details). However, if Waters cannot duplicate the problem or condition causing the return, the unit will be returned as: **No Problem Found**.

Waters Network Systems reserves the right to charge for the testing of non-defective units under warranty. Testing and repair of product that is not under warranty will result in a customer (user) charge.

7.3 Shipping and Packaging Information

Should you need to ship the unit back to Waters Network Systems, please follow these instructions: Package the unit carefully. It is recommended that you use the original container if available. Units should be wrapped in a "bubble-wrap" plastic sheet or bag for shipping protection. (You may retain all connectors and this Installation Guide.)

CAUTION: Do not pack the unit in Styrofoam "popcorn" type packing material. This material may cause electro-static shock damage to the unit.

Clearly mark the Return Material Authorization (RMA) number on the outside of the shipping container. Waters Network Systems is not responsible for your return shipping charges.

Ship the package to:

Waters Network Systems
Attention: Customer Service
945 37th Avenue, NW
Rochester, MN 55901

8.0 Warranty

Waters Network Systems' Warranty Statement

Waters Network Systems' products are warranted against defects in materials and workmanship. The warranty period for each product will be provided upon request at the time of purchase. Unless otherwise stated, the warranty period is for the useable life of the product.

In the event of a malfunction or other indication of product failure attributable directly to faulty materials and/or workmanship, Waters Network Systems will, at its option, repair or replace the defective products or components at no additional charge as set for herein. This limited warranty does not include service to repair damage resulting from accident, disaster, misuse, neglect, lightning, acts of God, tampering or product modification.

Service under the warranty may be obtained by contacting Waters Network Systems and receiving a Return Material Authorization (RMA) number from Waters Network Systems. Returned product accompanied with the issued RMA number and prepaid shipping will be repaired or replaced by Waters Network Systems. Repaired or replaced products will be returned at no cost to the original Buyer and shipped via the carrier and method of delivery chosen by Waters Network Systems.

Specific warranty by product family is as follows:

ProSwitch-Secure:	Limited Lifetime (see note)
ProSwitch-SecureAir+:	Limited Lifetime
ProSwitch-Lite:	3 Years from date of manufacture (see note)
ProSwitch-Xpress:	Limited Lifetime
ProSwitch-Xtreme:	Limited Lifetime (see note)
ProSwitch-FlexPort:	Limited Lifetime
ProSwitch-FixPort:	Limited Lifetime
ProSwitch-CS and CSX:	3 Years from date of manufacture (see note)
ProMedia Converters	3 Years from date of manufacture (see note)

Note: Warranty period for any and all external power supplies is one (1) year from date of purchase.

EXCEPT FOR THE EXPRESS WARRANTY SET FORTH ABOVE, *WATERS NETWORK SYSTEMS* GRANTS NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, BY STATUTE OR OTHERWISE, REGARDING THE PRODUCTS, THEIR FITNESS FOR ANY PURPOSE, THEIR QUALITY, THEIR MERCHANTABILITY, OR OTHERWISE.

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